

Bringing it home

Local company part of Nano revolution

BY MILES DURRIE

“**N**anotechnology is here right now,” says Alain Vadeboncoeur, “and it’s going to change the window industry forever.”

Vadeboncoeur represents NanoTechnology Solutions, a local authorized distributor of Sketch Nanotechnology, based in Montreal, the companies are taking advantage of nanotechnology by making it possible to save energy and keep homes more comfortable by increasing the effectiveness of window glass. From the summer sun’s heat to the winter’s icy chill, windows — especially older ones, but even those with thick, double-pane, low-emissivity glass — are a building’s weak spot.

In fact, glass can allow as much as 71 per cent of the sun’s direct heat in and 48 per cent of radiant heat — produced by your furnace, for example — to pass right out through it. As part of an overall building envelope, windows are responsible for about 20 to 25 per cent of a building’s total energy loss, according to Canadian and U.S. figures.

“Windows look wonderful, but they are very inefficient,” says Paul Baxter partner in NanoTech Solutions with Vadeboncoeur, based out of Innisfail. “Our mission is to educate builders and owners of homes and commercial buildings about the power of the nanoparticle-based glass coating we market and install.”

The product originates in Japan, (Sketch Nanotechnologies is the Canadian right holder) where the energy-saving properties of nano-coated windows are well accepted.

Measured with a spectrum transmission meter, both ultraviolet and infrared transmission decrease exponentially with the nano coating, while visible light is changed negligibly.

In other words, the window remains transparent but it blocks almost all UV and thermal radiation.

Three-millimetre-thick glass, nano-coated on one side, even handily outperforms six-millimetre low-e industrial glass. The potential for saving construction costs by buying less-expensive windows and using the nano coating is significant.

“It’s a thermal barrier,” says Vadeboncoeur. “The heat and cold do not touch each other,” he says, adding that the product is the result of more than 15 years of testing to ensure a reliable molecular bond between the liquid coating and glass.

So how does it work? Nanotechnology involves the use of particles that are between 10 and 100 nanometres in size (a nanometre is one billionth of a metre, and a human hair is about 80,000 nanometres thick). When material is broken down into particles that small, it presents more atoms at the surface level — so its effective surface area increases. A layer that’s just the thickness of one particle can possess extremely high density and hardness.

Installation is straightforward. After a thorough degreasing procedure.

NanoTechnology Solutions’ certified installers apply the coating to the inside of the glass. After a curing period it reaches its full durability and effectiveness. “The cost is job dependent, but the energy savings and comfort are immediate,” Baxter says.



Paul Baxter and Alain Vadeboncoeur.

Light Transmission Chart

	Normal untreated window double pane residential 3mm glass	Untreated double pane 6 mm thick commercial low-e glass	Glass with Nano coating Residential double pane 3mm
UV transmission:	52.3%	28.4	1.0
IR transmission:	54%	7.2	13.9
Visible Light:	77.3%	62.6	60.4

*Measurements taken in Calgary on January 9, 2017, using a Linshang Spectrum Transmission Meter